Drinking Water Surveillance Program

MITCHELL'S BAY WATER TREATMENT PLANT

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MITCHELL'S BAY
WATER TREATMENT PLANT

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1988

FEBRUARY 1990

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

MITCHELL'S BAY WATER TREATMENT PLANT
1988 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The Mitchell's Bay Water Treatment Plant is a package plant using conventional treatment to treat water from Lake St. Clair. The process consists of coagulation, flocculation, sedimentation, filtration and disinfection. Powdered Activated Carbon was added for taste and odour control. This plant has a design capacity of 1.1 x 1000 m^3/day and serves a population of 350.
Raw and treated water samples were taken monthly from April to December and were analyzed for approximately 160 parameters. Parameters were divided into the following groups Bacteriological, Inorganic and Physical(Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Chlorophenols, Pesticides and PCB, Phenolics, Polynuclear Aromatic Hydrocarbons, Specific Pesticides and Volatiles).

A summary of results is shown in Table 1.

Inorganic and Physical parameters (Laboratory Chemistry, Field Chemistry and Metals) were all below applicable health related ODWOs.

Of approximately 110 Organic parameters tested for on a monthly basis, none exceeded health related guidelines.

During 1988 the DWSP sampling results indicated that the Mitchell's Bay Water Treatment Plant produced good quality water at the plant.

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP

SUMMARY TABLE BY SCAN

SCAN	RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE
BACTERIOLOGICAL	31	23	74	30	5	16
CHEMISTRY (FLD)	26	26	100	54	54	100
CHEMISTRY (LAB)	182	163	89	179	120	67
METALS	216	133	61	216	110	50
CHLOROAROMATICS	126	0	0	126	0	0
CHLOROPHENOLS	12	0	0	12	0	0
PAH	153	0	0	153	0	0
PESTICIDES & PCB	300	0	0	300	0	0
PHENOLICS	8	7	87	9	2	22
SPECIFIC PESTICIDES	56	0	0	56	0	0
VOLATILES	257	0	0	256	36	14
TOTAL	1367	352		1391	327	

NO HEALTH RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

MITCHELL'S BAY WATER TREATMENT PLANT
1988 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The DWSP was initiated at the Mitchell's Bay Water Treatment Plant in the summer of 1985 as part of a study on the St. Clair/Detroit River area. Annual reports were published in 1986 (ISBN 0-7729-2563-1) and 1987 (ISSN 0840-513X).

This report contains information and results for 1988.

PLANT DESCRIPTION

The Mitchell's Bay Water Treatment Plant is a conventional treatment package plant which treats water from Lake St. Clair. The treatment process consists of coagulation, flocculation, sedimentation, filtration and disinfection. Powdered Activated Carbon (PAC) was used in 1988 to control taste and odour problems.

The treatment plant has a design capacity of 1.1 x 1000 m^3/day and sample day flows ranging from 0.042 x 1000 m^3/day to 0.1 x 1000 m^3/day. The plant serves a population of 350 people.

The plant location is shown in Figure 1. Plant process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

METHODS

Water samples were obtained from two DWSP approved locations;

i) Raw - The water originated from the lowlift discharge and was sampled through a copper sample line. The sample tap is located at the start of the package plant.

ii) Treated - The water originated from the highlift discharge after addition of all treatment chemicals and was sampled through a copper sample line. The sample tap is located in the plant laboratory.

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line. Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

MITCHELLS BAY WATER TREATMENT PLANT

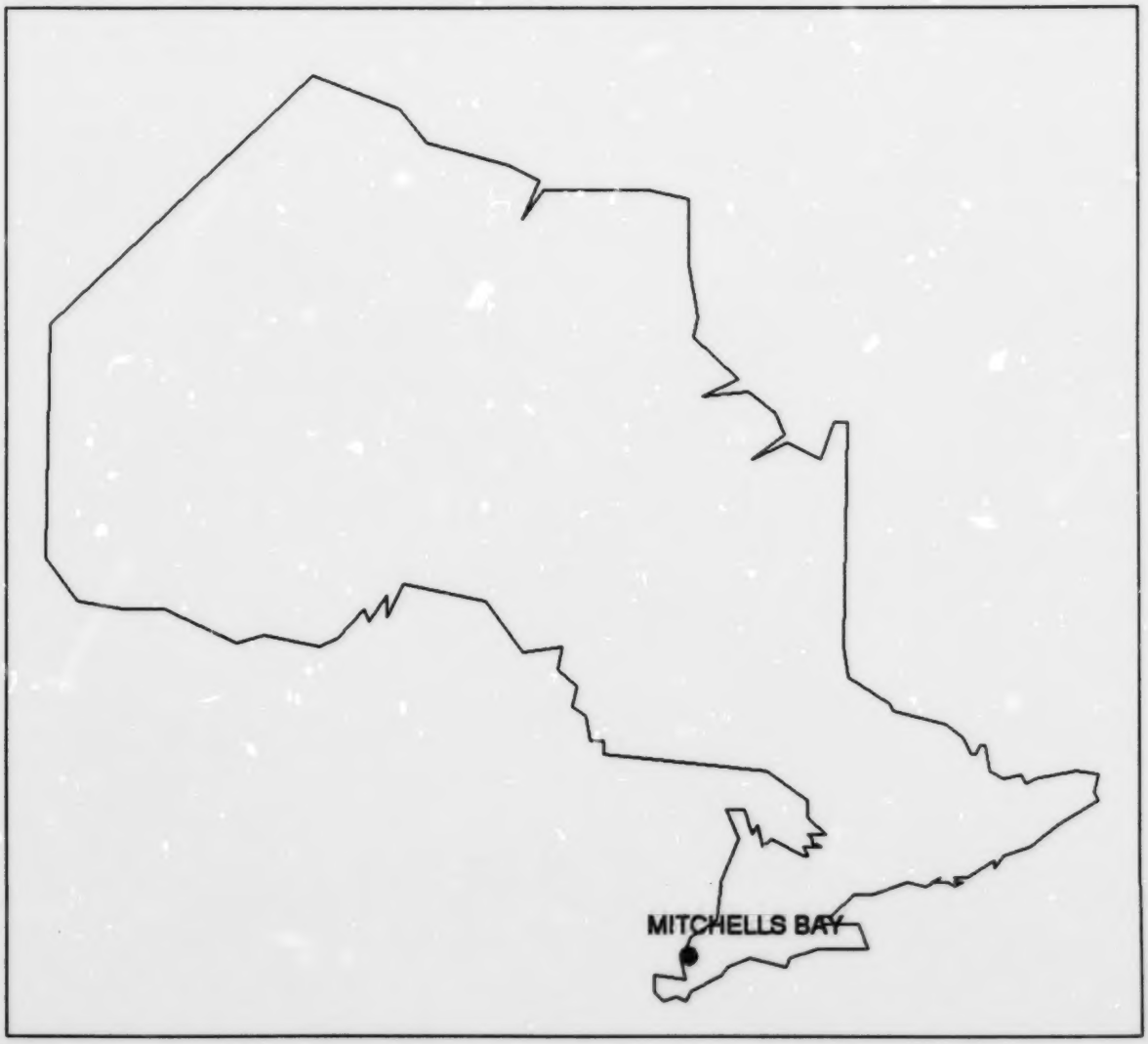

FIGURE 2

MITCHELL'S BAY WATER TREATMENT PLANT

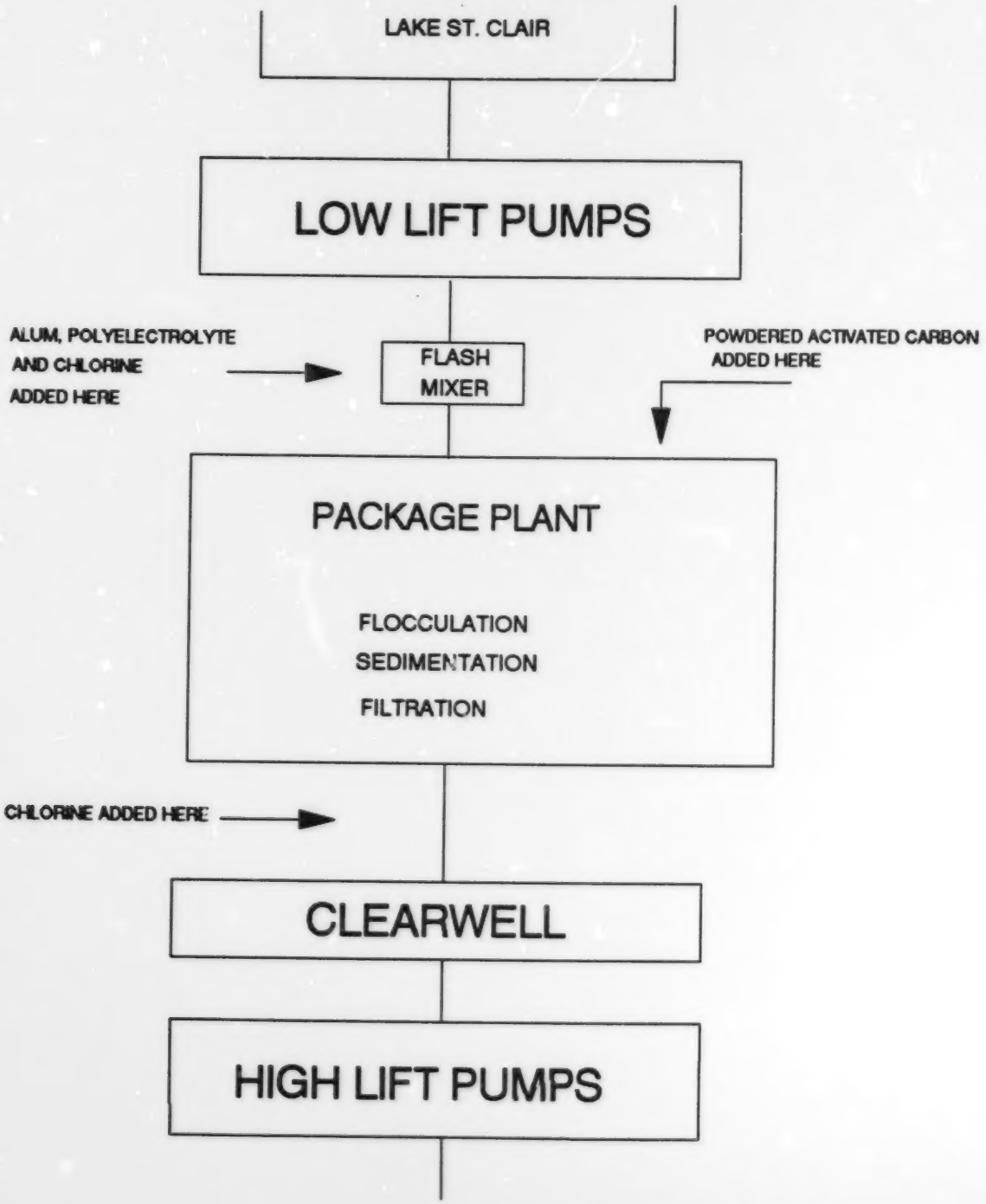

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

MITCHELL'S BAY WATER TREATMENT PLANT

LOCATION:	MITCHELL'S BAY MITCHELL'S BAY, ONTARIO N8Y 1G4 (519-351-3838)
SOURCE:	RAW WATER SOURCE - LAKE ST. CLAIR
DESIGN CAPACITY:	1.1 (1000 M^3/DAY)
OPERATION:	MINISTRY OF ENVIRONMENT
PLANT SUPERINTENDENT:	G. KEMPENAAR
MINISTRY REGION:	SOUTHWESTERN
DISTRICT OFFICER:	M. LOOBY

MUNICIPALITY SERVED	POPULATION
MITCHELL'S BAY	350

calculated by dividing the volume of water between the two sampling points by the sample day flow. For example, if it was determined that the retention time within the plant was five hours then there would be a five hour interval between the raw and treated sampling.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in a uniform manner.

Sample day flow, treatment chemical dosages and field measurements such as Turbidity, Chlorine Residuals, pH and Temperature were recorded on the day of sampling and were entered onto the DWSP data base as submitted.

RESULTS

Water at the Mitchell's Bay Water Treatment Plant was sampled for approximately 160 parameters monthly from April to December. The Specific Pesticides and Chlorophenols were only sampled in June and November.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analysed by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analysed on the DWSP.

Associated guidelines and detection limits are also supplied on both tables. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters, these are currently under review. When an ODWO is not available guidelines/limits from other agencies are consulted. The Parameters Listing System (PALIS) recently published (ISBN 0-7729-4461-X) by the MOE catalogues and

keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Although some of the parameters measured on DWSP may be present in the raw and treated water as a result of pollution, many of the compounds detected are naturally occurring or are treatment by-products.

Plant operational personnel address occurrences of taste and odour or biological water quality parameters. The DWSP does not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable results as defined by established MOE laboratory analytical reporting protocols. While they can be useful in trend analysis or confirmation of the presence of a specific contaminant that is repeatedly detected at these levels, the occasional finding of a trace level of a contaminant is not considered to be significant. **DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.**

Bacteriology

Positive results for the Bacteriology scan were present five times in the treated water. The positive parameters were Standard Plate Count, Total Coliform MF and/or Total Coliform Background. A Total Coliform count by the membrane filtration method of 1 /100 mL was

detected in the July treated water sample.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality; the routine monitoring program usually requires the taking of multiple samples in a given system. Routine bacteriological monitoring, as outlined in the ODWOs is carried out by the operating authority.

Inorganic and Physical

Laboratory and Field Chemistry

The results for the Laboratory Chemistry and Field Chemistry scans were below all applicable health related ODWOs.

It is desirable that the Temperature of drinking water be less than 15°C; the palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of the treated water may exceed the objective as a result of higher temperatures in the source water. The desired ODWO was exceeded six times in the treated water.

The ODWO indicate that a hardness level of between 80 and 100 mg/L as calcium carbonate for domestic waters, provides an acceptable balance between corrosion and incrustation. Water supplies with a

hardness greater than 200 mg/L are considered poor and would possess a tendency to form scale deposits and result in excessive soap consumption. The Mitchells Bay water was always less then 200 mg/L.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier Index. The Langelier Index for the Mitchells Bay water is mostly negative.

Metals

The results reported for the Metals scan were all below any applicable health related ODWOs.

Several metal results for the raw water sampled in April appear to be anomalous. Further sampling did not support the April findings.

At present, there is no evidence that Aluminum is physiologically harmful and no health limit for drinking water has been specified. The measure of residual Aluminum in the treated water is important to indicate the efficiency of the treatment process. The ODWOs indicate that a useful guideline is to maintain a residual below 100 ug/L as Al in the water leaving the plant to avoid problems in the distribution system. Aluminum values exceeded the ODWO operational guideline once in the treated water.

Organic Parameters

Chloroaromatics

The results of the Chloroaromatics scan showed that no Chloroaromatics were detected.

Chlorophenols

The results of the Chlorophenols scan showed that one Chlorophenol was detected:

Pentachlorophenol

Pentachlorophenol was detected at a trace level, once in the raw water.

Pestcides and PCB (Polychlorinated Biphenyls)

The results of the Pesticides and PCB scan showed that no PCBs were detected and that two pesticides were detected:

Alpha BHC

Lindane

There are several isomers of BHC (Benzene Hexachloride); gaam BHC is the active ingredient of the pesticide Lindane, while alpha BHC is the most predominant isomer found in surface waters of the Great Lakes Basin, as indicated in results from other water supplies on DWSP.

Alpha BHC was detected at trace levels, four times in the raw water and five times in the treated water.

Lindane was detected at trace levels, twice in the raw water.

Specific Pesticides

Results of the Specific Pesticides scan showed that no Specific Pesticides were detected.

Phenolics

The maximum desirable concentration of phenolic substances in drinking water is 2.0 ug/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours, particularly in chlorinated water. Phenolics were detected in the raw water at 0.8 ug/L to 3.6 ug/L and at 1.6 and 1.8 ug/L in the treated water. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Polynuclear Aromatic Hydrocarbons (PAH)

The results of the PAH scan showed that one PAH was detected:

Dimethyl Benz(A)Anthracene

Dimethyl Benz(A)Anthracene was detected at a trace level once in the treated water.

Volatiles

The results of the Volatiles scan showed that six parameters other

than Trihalomethanes(THMs), were detected:

Benzene

Toluene

Ethylbenzene

Meta-Xylene

Ortho-Xylene

Tetrachloroethylene

Benzene was detected at trace levels, once in the raw water and twice in the treated water.

Toluene was detected at trace levels, twice in the treated water. The detection of toluene at low, trace levels is a laboratory artifact derived from the analytical methodology. The purge-and-trap analytical technique depends on the purging of the volatile organics in the water sample with helium gas onto a Tenax trapping column. The volatile materials are subsequently thermally desorbed, separated and quantified. Tenax, a toluene-like polymeric material, tends to decompose sporadically upon heating into toluene and other aromatic componenets (ethylbenzene and xylene) giving instrument blanks in the order of 0.05 ug/L.

Ethylbenzene was detected at trace levels, four times in the treated water.

Meta-Xylene (M-Xylene) was detected at a trace level, once in the treated water.

Ortho-Xylene (O-Xylene) was detected at trace levels, three times in the treated water.

The volatiles listed above are typically found on an occasional basis at other water supplies included on the DWSP usually at trace levels.

Tetrachloroethylene (T-Chloroethylene) was detected at a trace level, once in the treated water.

THMs are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Chlorodibromomethane, Dichlorobromomethane and Total THMs were always detected in the treated water samples. Bromoform was detected at trace levels in all but two treated water samples. All Total THM occurrences, ranging from 27.8 to 51.8 ug/L were well below the ODWO of 350 ug/L.

CONCLUSIONS

The Mitchell's Bay Water Treatment plant for the sample year of 1988 produced good quality water at the plant.

No health related guidelines, for organic or inorganic parameters, were exceeded during 1988.

Comparison with the results from the DWSP for 1986 and 1987 show that the raw and treated water quality from 1986 and 1987 has remained consistent.

RECOMMENDATIONS

One recommendation can be made:

1) Consideration should be given to reducing the frequency of sampling at this supply.

No health related guidelines, for organic or inorganic parameters, were exceeded during 1988.

Comparison with the results from the DWSP for 1986 and 1987 show that the raw and treated water quality from 1986 and 1987 has remained consistent.

RECOMMENDATIONS

One recommendation can be made:

1) Consideration should be given to reducing the frequency of sampling at this supply.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP SAMPLE DAY CONDITIONS FOR 1988

SAMPLE DAY CONDITIONS			TREATMENT CHEMICAL DOSAGES (MG/L)			
			COAGULATION	COAGULATION AID	TASTE & ODOUR	POST-CHLORINATION
			ALUM LIQUID	POLYELECTROLYTE	ACTIVATED CARBON POWDER	CHLORINE
DATE	RETENTION TIME(HRS)	FLOW (1000M3)				
APR 20	72.0	.	60.00	.60	3.80	1.88
MAY 18	72.0	.	60.00	.60	2.80	1.50
JUN 22	72.0	.1	50.00	.50	2.90	1.24
JUL 20	48.0	.1	40.00	.50	3.70	1.78
AUG 16	36.0	.1	40.00	.50	3.00	1.79
SEP 21	72.0	.1	40.00	.50	3.00	2.50
OCT 19	48.0	.	40.00	.50	3.00	2.00
NOV 23	48.0	.	40.00	.50	2.90	1.74
DEC 12	47.0	.	80.00	.90	4.20	.80

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	9	2	0	.	.	.
	STANDRD PLATE CNT MF	5	5	0	7	2	0
	P/A BOTTLE	.	.	.	5	0	0
	TOTAL COLIFORM MF	8	7	0	9	1	0
	T COLIFORM BCKGRD MF	9	9	0	9	2	0
*TOTAL SCAN BACTERIOLOGICAL		31	23	0	30	5	0
*TOTAL GROUP BACTERIOLOGICAL		31	23	0	30	5	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	9	9	0
	FLD CHLORINE FREE	.	.	.	9	9	0
	FLD CHLORINE (TOTAL)	.	.	.	9	9	0
	FLD PH	8	8	0	9	9	0
	FLD TEMPERATURE	9	9	0	9	9	0
	FLD TURBIDITY	9	9	0	9	9	0
*TOTAL SCAN CHEMISTRY (FLD)		26	26	0	54	54	0
CHEMISTRY (LAB)	ALKALINITY	9	9	0	9	9	0
	CALCIUM	9	9	0	9	9	0
	CYANIDE	8	0	0	8	0	0
	CHLORIDE	9	9	0	9	9	0
	COLOUR	9	9	0	9	1	8

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE
CHEMISTRY (LAB)	CONDUCTIVITY	9	9	0	9	9	0
	FLUORIDE	9	9	0	9	0	9
	HARDNESS	9	9	0	9	9	0
	IONCAL	9	6	0	9	6	0
	LANGELIERS INDEX	6	6	0	3	3	0
	MAGNESIUM	9	9	0	9	9	0
	SODIUM	9	9	0	9	9	0
	AMMONIUM TOTAL	9	7	2	9	7	2
	NITRITE	9	8	1	9	1	7
	TOTAL NITRATES	9	6	3	9	5	4
	NITROGEN TOT KJELD	9	9	0	9	9	0
	PH	9	9	0	9	9	0
	PHOSPHORUS FIL REACT	9	8	1	9	1	7
	PHOSPHORUS TOTAL	9	8	1	9	1	1
	SULPHATE	6	6	0	6	6	0
	TURBIDITY	9	9	0	9	8	1
*TOTAL SCAN CHEMISTRY (LAB)		182	163	8	179	120	39
METALS	SILVER	9	0	2	9	0	3
	ALUMINUM	9	9	0	9	9	0
	ARSENIC	9	4	5	9	0	8
	BARIUM	9	9	0	9	9	0
	BORON	9	8	1	9	7	2

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
METALS	BERYLLIUM	9	0	6	9	0	4
	CADMIUM	9	0	0	9	0	0
	COBALT	9	0	9	9	0	9
	CHROMIUM	9	8	1	9	3	5
	COPPER	9	9	0	9	9	0
	IRON	9	8	1	9	9	0
	MERCURY	9	1	8	9	2	7
	MANGANESE	9	9	0	9	9	0
	MOLYBDENUM	9	9	0	9	8	1
	NICKEL	9	1	6	9	0	4
	LEAD	9	9	0	9	9	0
	ANTIMONY	9	5	4	9	4	5
	SELENIUM	9	0	7	9	0	7
	STRONTIUM	9	9	0	9	9	0
	TITANIUM	9	9	0	9	8	1
	THALLIUM	9	0	1	9	0	0
	URANIUM	9	9	0	9	0	5
	VANADIUM	9	8	1	9	6	3
	ZINC	9	9	0	9	9	0
*TOTAL SCAN METALS		216	133	52	216	110	64
*TOTAL GROUP INORGANIC & PHYSICAL		424	322	60	449	284	103
CHLOROAROMATICS	HEXACHLOROBUTADIENE	9	0	0	9	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHLOROAROMATICS	123 TRICHLOROBENZENE	9	0	0	9	0	0
	1234 T-CHLOROBENZENE	9	0	0	9	0	0
	1235 T-CHLOROBENZENE	9	0	0	9	0	0
	124 TRICHLOROBENZENE	9	0	0	9	0	0
	1245 T-CHLOROBENZENE	9	0	0	9	0	0
	135 TRICHLOROBENZENE	9	0	0	9	0	0
	HCB	9	0	0	9	0	0
	HEXACHLOROETHANE	9	0	0	9	0	0
	OCTACHLOROSTYRENE	9	0	0	9	0	0
	PENTACHLOROBENZENE	9	0	0	9	0	0
	236 TRICHLOROTOLUENE	9	0	0	9	0	0
	245 TRICHLOROTOLUENE	9	0	0	9	0	0
	26A TRICHLOROTOLUENE	9	0	0	9	0	0
*TOTAL SCAN CHLOROAROMATICS		126	0	0	126	0	0
CHLOROPHENOLS	234 TRICHLOROPHENOL	2	0	0	2	0	0
	2345 T-CHLOROPHENOL	2	0	0	2	0	0
	2356 T-CHLOROPHENOL	2	0	0	2	0	0
	245-TRICHLOROPHENOL	2	0	0	2	0	0
	246-TRICHLOROPHENOL	2	0	0	2	0	0
	PENTACHLOROPHENOL	2	0	1	2	0	0
*TOTAL SCAN CHLOROPHENOLS		12	0	1	12	0	0

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DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PAH	PHENANTHRENE	9	0	0	9	0	0
	ANTHRACENE	9	0	0	9	0	0
	FLUORANTHENE	9	0	0	9	0	0
	PYRENE	9	0	0	9	0	0
	BENZO(A)ANTHRACENE	9	0	0	9	0	0
	CHRYSENE	9	0	0	9	0	0
	DIMETH. BENZ(A)ANTHR	9	0	0	9	0	1
	BENZO(E) PYRENE	9	0	0	9	0	0
	BENZO(J) FLUORANTHEN	0	0	0	0	0	0
	BENZO(B) FLUORANTHEN	9	0	0	9	0	0
	PERYLENE	9	0	0	9	0	0
	BENZO(K) FLUORANTHEN	9	0	0	9	0	0
	BENZO(A) PYRENE	9	0	0	9	0	0
	BENZO(G,H,I) PERYLEN	9	0	0	9	0	0
	DIBENZO(A,H) ANTHRAC	9	0	0	9	0	0
	INDENO(1,2,3-C,D) PY	9	0	0	9	0	0
	BENZO(B) CHRYSENE	9	0	0	9	0	0
	ANTHANTHRENE	0	0	0	0	0	0
	CORONENE	9	0	0	9	0	0
*TOTAL SCAN PAH		153	0	0	153	0	1
PESTICIDES & PCB	ALDRIN	9	0	0	9	0	0
	ALPHA BHC	9	0	4	9	0	5

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SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	BETA BHC	9	0	0	9	0	0
	LINDANE	9	0	2	9	0	0
	ALPHA CHLORDANE	9	0	0	9	0	0
	GAMMA CHLORDANE	9	0	0	9	0	0
	DIELDRIN	9	0	0	9	0	0
	METHOXYCHLOR	9	0	0	9	0	0
	ENDOSULFAN I	9	0	0	9	0	0
	ENDOSULFAN II	9	0	0	9	0	0
	ENDRIN	9	0	0	9	0	0
	ENDOSULFAN SULPHATE	9	0	0	9	0	0
	HEPTACHLOR EPOXIDE	9	0	0	9	0	0
	HEPTACHLOR	9	0	0	9	0	0
	MIREX	9	0	0	9	0	0
	OXYCHLORDANE	9	0	0	9	0	0
	OPDDT	9	0	0	9	0	0
	PCB	9	0	0	9	0	0
	DDD	9	0	0	9	0	0
	PPDDE	9	0	0	9	0	0
	PPDDT	9	0	0	9	0	0
	AMETRINE	9	0	0	9	0	0
	ATRAZINE	9	0	0	9	0	0
	ATRATONE	9	0	0	9	0	0
	CYANAZINE	9	0	0	9	0	0
	DES ETHYL ATRAZINE	6	0	0	6	0	0
	DES ETHYL SIMAZINE	6	0	0	6	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	PROMETONE	9	0	0	9	0	0
	PROPAZINE	9	0	0	9	0	0
	PROMETRYNE	9	0	0	9	0	0
	METRIBUZIN	9	0	0	9	0	0
	SIMAZINE	9	0	0	9	0	0
	ALACHLOR	9	0	0	9	0	0
	METOLACHLOR	9	0	0	9	0	0
*TOTAL SCAN PESTICIDES & PCB		300	0	6	300	0	5
PHENOLICS	PHENOLICS	8	7	1	9	2	6
*TOTAL SCAN PHENOLICS		8	7	1	9	2	6
SPECIFIC PESTICIDES	TOXAPHENE	0	0	0	0	0	0
	2,4,5-T	2	0	0	2	0	0
	2,4-D	2	0	0	2	0	0
	2,4-DB	2	0	0	2	0	0
	2,4 D PROPIONIC ACID	2	0	0	2	0	0
	DICAMBA	2	0	0	2	0	0
	PICHLORAM	0	0	0	0	0	0
	SILVEX	2	0	0	2	0	0
	DIAZINON	2	0	0	2	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY

SUMMARY TABLE OF RESULTS (1988)

		RAW			TREATED		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
SPECIFIC PESTICIDES	DICHLORVOS	2	0	0	2	0	0
	CHLORPYRIFOS	2	0	0	2	0	0
	ETHION	2	0	0	2	0	0
	AZINPHOS-METHYL	0	0	0	0	0	0
	MALATHION	2	0	0	2	0	0
	MEVINPHOS	2	0	0	2	0	0
	METHYL PARATHION	2	0	0	2	0	0
	METHYLTRITHION	2	0	0	2	0	0
	PARATHION	2	0	0	2	0	0
	PHORATE	2	0	0	2	0	0
	RELDAN	2	0	0	2	0	0
	RONNEL	2	0	0	2	0	0
	AMINOCARB	0	0	0	0	0	0
	BENOMYL	2	0	0	2	0	0
	BUX	2	0	0	2	0	0
	CARBOFURAN	2	0	0	2	0	0
	CICP	2	0	0	2	0	0
	DIALLATE	2	0	0	2	0	0
	EPTAM	2	0	0	2	0	0
	IPC	2	0	0	2	0	0
	PROPOXUR	2	0	0	2	0	0
	CARBARYL	2	0	0	2	0	0
	BUTYLATE	2	0	0	2	0	0
*TOTAL SCAN SPECIFIC PESTICIDES		56	0	0	56	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	BENZENE	9	0	1	9	0	2
	TOLUENE	9	0	0	9	0	2
	ETHYLBENZENE	9	0	0	9	0	4
	P-XYLENE	9	0	0	9	0	0
	M-XYLENE	9	0	0	9	0	1
	O-XYLENE	9	0	0	9	0	3
	STYRENE	3	0	0	3	0	0
	1,1 DICHLOROETHYLENE	9	0	0	9	0	0
	METHYLENE CHLORIDE	9	0	0	9	0	0
	T1,2DICHLOROETHYLENE	9	0	0	9	0	0
	1,1 DICHLOROETHANE	9	0	0	9	0	0
	CHLOROFORM	9	0	1	9	9	0
	111, TRICHLOROETHANE	9	0	0	9	0	0
	1,2 DICHLOROETHANE	9	0	0	9	0	0
	CARBON TETRACHLORIDE	9	0	0	9	0	0
	1,2 DICHLOROPROPANE	9	0	0	9	0	0
	TRICHLOROETHYLENE	9	0	0	9	0	0
	DICHLOROBROMOMETHANE	9	0	0	9	9	0
	112 TRICHLOROETHANE	9	0	0	9	0	0
	CHLORODIBROMOMETHANE	9	0	0	9	9	0
	T-CHLOROETHYLENE	9	0	0	8	0	1
	BROMOFORM	9	0	0	9	0	7
	1122 T-CHLOROETHANE	9	0	0	9	0	0
	CHLOROBENZENE	9	0	0	9	0	0
	1,4 DICHLOROBENZENE	9	0	0	9	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	1,3 DICHLOROBENZENE	9	0	0	9	0	0
	1,2 DICHLOROBENZENE	9	0	0	9	0	0
	TRIFLUOROCHLOROTOLUE	2	0	0	2	0	0
	ETHLYENE DIBROMIDE	9	0	0	9	0	0
	TOTL TRIHALOMETHANES	9	0	0	9	9	0
*TOTAL SCAN VOLATILES		257	0	2	256	36	20
*TOTAL GROUP ORGANIC		912	7	10	912	38	32
TOTAL		1367	352	70	1391	327	135

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)

1. Maximum Acceptable Concentration (MAC)

1+. MAC for Total Trihalomethanes

1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours

2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)

1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, the AO is a total)

C WORLD HEALTH ORGANIZATION (WHO)

1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)

1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)

1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. However, studies of long-term environmental trends and modelling may be adversely affected by exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported qualified by the code "<T". Results quantified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. However the average of such data is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!LA	No Data: Laboratory Accident

!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UAL	Unreliable: Sample Age Exceeds Normal Limit
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
BACTERIOLOGICAL			
FECAL COLIFORM MF (CT/100ML)		DET'N LIMIT = 0	GUIDELINE = 0 (A1)
APR	0	.	
MAY	0	.	
JUN	0	.	
JUL	BDL	.	
AUG	12	.	
SEP	BDL	.	
OCT	0 T24	.	
NOV	3 T24	.	
DEC	0	.	
STANDRD PLATE CNT MF (CT/ML)		DET'N LIMIT = 0	GUIDELINE = 500/ML (A1)
APR	550	IAW	
MAY	226	17	
JUN	2400 >	7	
JUL	2400 >	IAW	
AUG	1200	0	
SEP	.	0 <=>	
OCT	.	0 <=>	
NOV	.	4 <=>	
DEC	.	1 <=>	
P/A BOTTLE ( )		DET'N LIMIT = 0	GUIDELINE = 0 (A1*)
APR	.	0	
MAY	.	0	
JUN	.	0	
JUL	.	0	
AUG	.	0	
TOTAL COLIFORM MF (CT/100ML)		DET'N LIMIT = 0	GUIDELINE = 5/100ML(A1)
APR	60 A3C	0	
MAY	8 A3C	0	
JUN	BDL	0	
JUL	20 A3C	1	
AUG	200	0	
SEP	TOP	0 T24	
OCT	4 A3C	0 T24	
NOV	6 T24	0 T24	
DEC	16	0	
T COLIFORM BCKGRD MF (CT/100ML)		DET'N LIMIT = 0	GUIDELINE = N/A
APR	1500	0	
MAY	640	0	
JUN	2600	0	
JUL	9200	122	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
AUG	9800	0	
SEP	2400 >	0 T24	
OCT	1660 A3C	2 T24	
NOV	76 T24	0 T24	
DEC	4800 >	0	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED		
CHEMISTRY (FLD)				
FLD CHLORINE (COMB) ( )			DET'N LIMIT = N/A	GUIDELINE = N/A
APR	.	.200		
MAY	.	.200		
JUN	.	.300		
JUL	.	.100		
AUG	.	.200		
SEP	.	.200		
OCT	.	.200		
NOV	.	.300		
DEC	.	.200		
FLD CHLORINE FREE ( )			DET'N LIMIT = N/A	GUIDELINE = N/A
APR	.	.500		
MAY	.	.600		
JUN	.	.700		
JUL	.	.500		
AUG	.	.100		
SEP	.	.500		
OCT	.	.400		
NOV	.	.500		
DEC	.	.600		
FLD CHLORINE (TOTAL) ( )			DET'N LIMIT = N/A	GUIDELINE = N/A
APR	.	.700		
MAY	.	.800		
JUN	.	1.000		
JUL	.	.600		
AUG	.	.300		
SEP	.	.700		
OCT	.	.600		
NOV	.	.800		
DEC	.	.800		
FLD PH (DIMNSLESS)			DET'N LIMIT = N/A	GUIDELINE = 6.5-8.5(A4)
APR	7.200	6.600		
MAY	7.100	7.200		
JUN	8.500	6.800		
JUL	.	6.800		
AUG	8.400	6.800		
SEP	7.700	7.000		
OCT	8.000	7.200		
NOV	7.200	7.000		
DEC	7.600	7.200		
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A	GUIDELINE = 15 (A1)
APR	8.000	13.000		

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
MAY	15.000	16.000	
JUN	22.000	23.000	
JUL	25.000	26.000	
AUG	27.000	28.000	
SEP	20.000	21.000	
OCT	14.000	16.000	
NOV	10.000	15.000	
DEC	5.000	10.500	

FLD TURBIDITY (FTU) DET'N LIMIT = N/A GUIDELINE = 1.0 (A1)

APR	17.000	.210
MAY	6.100	.150
JUN	3.800	.300
JUL	2.300	.220
AUG	5.000	.290
SEP	2.800	.180
OCT	1.100	.130
NOV	16.000	.160
DEC	11.000	.140

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
CHEMISTRY (LAB)			
ALKALINITY (MG/L)		DET'N LIMIT = .200	GUIDELINE = 30-500 (A4)
APR	118.800	74.400	
MAY	100.900	67.300	
JUN	69.200	20.500	
JUL	58.800	14.600	
AUG	63.800	21.700	
SEP	77.700	30.100	
OCT	95.500	54.300	
NOV	131.300	74.700	
DEC	137.600	86.300	
CALCIUM (MG/L)		DET'N LIMIT = .100	GUIDELINE = 100 (F2)
APR	42.800	44.800	
MAY	34.400	35.800	
JUN	19.200	20.200	
JUL	17.600	18.600	
AUG	19.400	20.600	
SEP	24.400	21.600	
OCT	31.200	31.600	
NOV	54.800	56.600	
DEC	58.600	56.800	
CHLORIDE (MG/L)		DET'N LIMIT = .200	GUIDELINE = 250 (A3)
APR	14.600	17.100	
MAY	12.400	14.100	
JUN	12.700	14.600	
JUL	9.900	11.800	
AUG	14.000	16.100	
SEP	12.400	13.400	
OCT	10.700	12.400	
NOV	25.100	26.300	
DEC	22.900	23.700	
COLOUR (HZU)		DET'N LIMIT = .5	GUIDELINE = 5.0 (A3)
APR	6.000	1.000 <T	
MAY	4.000	1.500 <T	
JUN	6.000	2.000 <T	
JUL	6.500	2.500	
AUG	9.500	1.000 <T	
SEP	8.000	2.000 <T	
OCT	4.000	1.500 <T	
NOV	7.500	1.500 <T	
DEC	8.500	1.500 <T	
CONDUCTIVITY (UMHO/CM)		DET'N LIMIT = 1	GUIDELINE = 400 (F2)
APR	342	360	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
MAY	276	299	
JUN	218	243	
JUL	182	210	
AUG	202	234	
SEP	227	231	
OCT	251	276	
NOV	426	436	
DEC	428	433	
FLUORIDE (MG/L)		DET'N LIMIT = .01	GUIDELINE = 2.400 (A1)
APR	.100	.030 <T	
MAY	.090	.040 <T	
JUN	.110	.040 <T	
JUL	.090	.030 <T	
AUG	.120	.040 <T	
SEP	.120	.040 <T	
OCT	.080	.040 <T	
NOV	.120	.040 <T	
DEC	.120	.040 <T	
HARDNESS (MG/L)		DET'N LIMIT = .500	GUIDELINE = 80-100 (A4)
APR	147.000	153.000	
MAY	120.000	122.000	
JUN	82.000	86.000	
JUL	78.000	81.000	
AUG	84.000	87.000	
SEP	97.000	88.000	
OCT	113.000	113.000	
NOV	187.000	191.000	
DEC	198.000	192.000	
IONCAL (DIMNSLESS)		DET'N LIMIT = N/A	GUIDELINE = N/A
APR	.000 NAF	.000 NAF	
MAY	.000 NAF	.000 NAF	
JUN	.000 NAF	.000 NAF	
JUL	2.544	1.603	
AUG	3.375	.583	
SEP	.476	3.330	
OCT	2.583	4.597	
NOV	1.851	1.464	
DEC	.901	2.127	
LANGELIERS INDEX (DIMNSLESS)		DET'N LIMIT = N/A	GUIDELINE = N/A
APR	.621 NAF	.236 NAF	
MAY	.291 NAF	.317 NAF	
JUN	-.044 NAF	-1.480 NAF	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
	-.348	-2.010	
JUL	-.038	-1.193	
AUG	.017	-.949	
SEP	.334	-.555	
OCT	.563	-.218	
NOV	.763	.136	
DEC			
MAGNESIUM (MG/L)		DET'N LIMIT = .050	GUIDELINE = 30 (F2)
APR	9.700	9.900	
MAY	8.300	7.900	
JUN	8.200	8.600	
JUL	8.200	8.400	
AUG	8.700	8.700	
SEP	8.700	8.300	
OCT	8.400	8.200	
NOV	12.200	12.100	
DEC	12.600	12.300	
SODIUM (MG/L)		DET'N LIMIT = .200	GUIDELINE = 200 (C3)
APR	8.400	8.600	
MAY	7.400	8.600	
JUN	7.000	6.800	
JUL	6.200	6.200	
AUG	8.000	8.400	
SEP	7.600	7.200	
OCT	6.400	7.000	
NOV	11.600	11.200	
DEC	10.200	9.800	
AMMONIUM TOTAL (MG/L)		DET'N LIMIT = 0.002	GUIDELINE = .05 (F2)
APR	.008 <T	.006 <T	
MAY	.026	.014	
JUN	.006 <T	.008 <T	
JUL	.070	.012	
AUG	.042	.014	
SEP	.034	.010	
OCT	.020	.008	
NOV	.060	.012	
DEC	.046	.012	
NITRITE (MG/L)		DET'N LIMIT = 0.001	GUIDELINE = 1.000 (A1)
APR	.026	.001 <T	
MAY	.044	BDL	
JUN	.029	.001 <T	
JUL	.021	.002 <T	
AUG	.006	.002 <T	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
TOTAL NITRATES (MG/L)		DET'N LIMIT = .020	GUIDELINE = 10.000 (A1)
SEP	.004 <T	.001 <T	
OCT	.004	.002	
NOV	.045	.002 <T	
DEC	.031	.004 <T	
APR	1.400	1.550	
MAY	.400	.370	
JUN	.115	.055 <T	
JUL	.090 <T	.070 <T	
AUG	.090 <T	.070 <T	
SEP	.040 <T	.030 <T	
OCT	.055	.060	
NOV	3.480	3.300	
DEC	4.210	3.690	
NITROGEN TOT KJELD (MG/L)		DET'N LIMIT = .020	GUIDELINE = N/A
APR	.350	.150	
MAY	.230	.110	
JUN	.230	.120	
JUL	.410	.140	
AUG	.530	.200	
SEP	.400	.160	
OCT	.200	.120	
NOV	.550	.240	
DEC	.560	.290	
PH (DIMENSLESS)		DET'N LIMIT = N/A	GUIDELINE = 6.5-8.5(A4)
APR	8.360	8.160	
MAY	8.180	7.740	
JUN	8.240	7.320	
JUL	8.030	6.960	
AUG	8.270	7.570	
SEP	8.150	7.650	
OCT	8.280	7.640	
NOV	8.160	7.610	
DEC	8.310	7.900	
PHOSPHORUS FIL REACT (MG/L)		DET'N LIMIT = .0005	GUIDELINE = N/A
APR	.004	.000 <T	
MAY	.003	.002 <T	
JUN	.012	.000 <T	
JUL	.012	.001	
AUG	.007	.000 <T	
SEP	.001 <T	.001 <T	
OCT	.001	.000	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
NOV	.002	.001 <T	
DEC	.002	.000 <T	
PHOSPHORUS TOTAL (MG/L)		DET'N LIMIT = .002	GUIDELINE = .40 (F2)
APR	.022	BDL	
MAY	.019	.004 <T	
JUN	.020	BDL	
JUL	.025	BDL	
AUG	.023	.023	
SEP	.011	BDL	
OCT	.007 <T	BDL	
NOV	.020	BDL	
DEC	.019	BDL	
SULPHATE ( )		DET'N LIMIT = .200	GUIDELINE = 500. (A3)
JUL	15.400	59.100	
AUG	13.950	57.870	
SEP	17.800	55.800	
OCT	18.120	59.300	
NOV	35.750	85.270	
DEC	36.000	82.000	
TURBIDITY (FTU)		DET'N LIMIT = .02	GUIDELINE = 1.00 (A1)
APR	7.900	.080 <T	
MAY	3.100	.110	
JUN	1.410	.220	
JUL	1.600	.310	
AUG	1.700	.510	
SEP	1.790	.730	
OCT	1.700	.700	
NOV	10.300	.400	
DEC	9.600	.310	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
METALS			
SILVER (UG/L)		DET'N LIMIT = .020	GUIDELINE = 50. (A1)
APR	.030 <T	BDL	
MAY	BDL	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	.070 <T	
OCT	BDL	BDL	
NOV	BDL	.410 <T	
DEC	.050 <T	.030 <T	
ALUMINUM (UG/L)		DET'N LIMIT = .050	GUIDELINE = 100.(A4)
APR	266.800	42.920	
MAY	174.000	20.880	
JUN	220.400	58.000	
JUL	150.800	30.160	
AUG	440.800	150.800	
SEP	162.400	37.120	
OCT	58.000	18.560	
NOV	313.200	13.920	
DEC	174.000	16.240	
ARSENIC (UG/L)		DET'N LIMIT = 0.050	GUIDELINE = 50.0 (A1)
APR	.460 <T	.320 <T	
MAY	.690 <T	.300 <T	
JUN	1.100	.300 <T	
JUL	1.400	.420 <T	
AUG	2.700	1.000 <T	
SEP	1.400	.520 <T	
OCT	.590 <T	.380 <T	
NOV	.600 <T	.400 <T	
DEC	.490 <T	BDL	
BARIUM (UG/L)		DET'N LIMIT = 0.020	GUIDELINE = 1000. (A1)
APR	19.000	17.000	
MAY	18.000	17.000	
JUN	13.000	14.000	
JUL	11.000	11.000	
AUG	10.000	11.000	
SEP	14.000	13.000	
OCT	15.000	15.000	
NOV	29.000	27.000	
DEC	25.000	23.000	
BORON (UG/L)		DET'N LIMIT = 0.200	GUIDELINE = 5000. (A1)
APR	26.000	23.000	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
MAY	29.000	14.000 <T	
JUN	42.000	26.000	
JUL	19.000 <T	23.000	
AUG	35.000	30.000	
SEP	44.000	32.000	
OCT	21.000	18.000 <T	
NOV	68.000	67.000	
DEC	61.000	53.000	
BERYLLIUM (UG/L)		DET'N LIMIT = 0.010	GUIDELINE = .20 (H)
APR	.030 <T	.030 <T	
MAY	.050 <T	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	.020 <T	BDL	
SEP	.060 <T	.060 <T	
OCT	BDL	BDL	
NOV	.120 <T	.090 <T	
DEC	.130 <T	.040 <T	
COBALT (UG/L)		DET'N LIMIT = 0.020	GUIDELINE = 1000 (H)
APR	.310 <T	.100 <T	
MAY	.150 <T	.090 <T	
JUN	.090 <T	.100 <T	
JUL	.140 <T	.140 <T	
AUG	.140 <T	.110 <T	
SEP	.200 <T	.190 <T	
OCT	.120 <T	.130 <T	
NOV	.320 <T	.130 <T	
DEC	.160 <T	.100 <T	
CHROMIUM (UG/L)		DET'N LIMIT = 0.100	GUIDELINE = 50. (A1)
APR	2.500	.670 <T	
MAY	2.900	.190 <T	
JUN	2.800	.210 <T	
JUL	.230 <T	BDL	
AUG	2.100	1.000 <T	
SEP	2.800	1.300	
OCT	2.400	.740 <T	
NOV	7.100	5.600	
DEC	5.700	3.900	
COPPER (UG/L)		DET'N LIMIT = .100	GUIDELINE = 1000 (A3)
APR	380.000	14.000	
MAY	2.100	15.000	
JUN	2.800	21.000	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
IRON (UG/L)		DET'N LIMIT = 4.000	GUIDELINE = 300. (A3)
JUL	1.600	25.000	
AUG	2.500	23.000	
SEP	1.400	22.000	
OCT	1.100	20.000	
NOV	2.100	20.000	
DEC	6.400	22.000	
APR	410.000	72.000	
MAY	140.000	61.000	
JUN	79.000	120.000	
JUL	130.000	130.000	
AUG	140.000	76.000	
SEP	75.000	100.000	
OCT	50.000 <T	79.000	
NOV	250.000	110.000	
DEC	120.000	75.000	
MERCURY (UG/L)		DET'N LIMIT = 0.010	GUIDELINE = 1.000 (A1)
APR	.020	.020	
MAY	.020 <T	.020 <T	
JUN	.030 <T	.030 <T	
JUL	.030 <T	.030 <T	
AUG	.020 <T	.020 <T	
SEP	.030 <T	.030 <T	
OCT	.040 <T	.040 <T	
NOV	.030 <T	.030	
DEC	.050 <T	.040 <T	
MANGANESE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 50.0 (A3)
APR	14.000	6.400	
MAY	8.800	6.800	
JUN	5.800	9.600	
JUL	8.700	9.000	
AUG	9.000	7.200	
SEP	5.700	6.400	
OCT	2.900	4.700	
NOV	7.300	6.800	
DEC	3.900	5.200	
MOLYBDENUM (UG/L)		DET'N LIMIT = 0.020	GUIDELINE = 500 (H)
APR	.520	.860	
MAY	.760	.750	
JUN	1.000	.580	
JUL	.800	.450 <T	
AUG	.900	.820	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
SEP	.980	.830	
OCT	.750	.670	
NOV	1.300	1.200	
DEC	1.100	1.100	
NICKEL (UG/L)			DET'N LIMIT = 0.100 GUIDELINE = 50. (F3)
APR	5.000	.810 <T	
MAY	.150 <T	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	.170 <T	BDL	
SEP	.280 <T	2.000 <T	
OCT	1.400 <T	1.800 <T	
NOV	.360 <T	BDL	
DEC	.880 <T	.840 <T	
LEAD (UG/L)			DET'N LIMIT = 0.050 GUIDELINE = 50. (A1)
APR	29.000	.440	
MAY	.430	.300	
JUN	.710	.710	
JUL	.580	1.300	
AUG	.620	1.600	
SEP	.330	.840	
OCT	.230	.320	
NOV	.800	.470	
DEC	.480	.470	
ANTIMONY (UG/L)			DET'N LIMIT = .050 GUIDELINE = 146. (D4)
APR	.290	.160 <T	
MAY	.180 <T	.140 <T	
JUN	.150 <T	.100 <T	
JUL	.140 <T	.160 <T	
AUG	.400	.540	
SEP	.500	.470	
OCT	.200 <T	.130 <T	
NOV	.470	.570	
DEC	.240	.240	
SELENIUM (UG/L)			DET'N LIMIT = 0.200 GUIDELINE = 10. (A1)
APR	.950 <T	2.900 <T	
MAY	BDL	.950 <T	
JUN	.210 <T	2.200 <T	
JUL	BDL	BDL	
AUG	.320 <T	BDL	
SEP	.570 <T	1.700 <T	
OCT	.340 <T	1.900 <T	

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DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
NOV	1.100 <T	3.100 <T	
DEC	1.100 <T	1.900 <T	
STRONTIUM (UG/L)		DET'N LIMIT = .050	GUIDELINE = 2000.(H)
APR	130.000	140.000	
MAY	130.000	130.000	
JUN	120.000	120.000	
JUL	99.000	93.000	
AUG	100.000	100.000	
SEP	130.000	120.000	
OCT	120.000	120.000	
NOV	250.000	260.000	
DEC	210.000	200.000	
TITANIUM (UG/L)		DET'N LIMIT = .050	GUIDELINE = N/A
APR	6.400	3.000	
MAY	6.900	3.200	
JUN	6.700	2.700	
JUL	6.800	3.200	
AUG	6.500	3.900	
SEP	4.600	3.400	
OCT	3.700	1.500 <T	
NOV	16.000	6.500	
DEC	7.400	4.800	
THALLIUM (UG/L)		DET'N LIMIT = .010	GUIDELINE = 13. (D4)
APR	BDL	BDL	
MAY	BDL	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	.030 <T	BDL	
DEC	BDL	BDL	
URANIUM (UG/L)		DET'N LIMIT = .020	GUIDELINE = 20. (A2)
APR	.620	.050 <T	
MAY	.400	BDL	
JUN	.500	.040 <T	
JUL	.260	BDL	
AUG	.270	BDL	
SEP	.270	.100 <T	
OCT	.250	BDL	
NOV	.820	.060 <T	
DEC	.810	.040 <T	

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DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
VANADIUM (UG/L)		DET'N LIMIT = .050	GUIDELINE = 100 (H)
APR	.840	.470	
MAY	.600	.430 <T	
JUN	1.100	.500 <T	
JUL	1.400	.530	
AUG	1.900	.630	
SEP	.830	.530	
OCT	.450 <T	.490 <T	
NOV	.910	.530	
DEC	.650	.610	
ZINC (UG/L)		DET'N LIMIT = .001	GUIDELINE = 5000. (A3)
APR	100.000	6.200	
MAY	4.200	6.700	
JUN	2.200	8.800	
JUL	2.100	8.800	
AUG	5.300	7.800	
SEP	4.900	7.500	
OCT	1.800	6.400	
NOV	9.300	10.000	
DEC	5.000	7.800	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
CHLOROPHENOLS			
PENTACHLOROPHENOL (NG/L)		DET'N LIMIT = 50.	GUIDELINE = 60000 (B1)
JUN	BDL	BDL	
NOV	10.000 <T	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
PAH DIMETH. BENZ(A)ANTHR (NG/L)		DET'N LIMIT = 5.000	GUIDELINE = 2.8 (D4T)
APR	BDL	BDL	
MAY	BDL	50.000 <T	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
PESTICIDES & PCB			
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000 GUIDELINE = 700 (G)
APR	2.000 <T	1.000 <T	
MAY	2.000 <T	2.000 <T	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	1.000 <T	
OCT	2.000 <T	5.000 <T	
NOV	1.000 <T	1.000 <T	
DEC	BDL	BDL	
LINDANE (NG/L)			DET'N LIMIT = 1.000 GUIDELINE = 4000 (A1)
APR	BDL	BDL	
MAY	1.000 <T	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	1.000 <T	BDL	
DEC	BDL	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
PHENOLICS (UG/L)		DET'N LIMIT = 0.2	GUIDELINE = 2.00 (A3)
APR	ICR	BDL	
MAY	.800 <T	.600 <T	
JUN	2.000	.600 <T	
JUL	2.200	1.600	
AUG	3.600	1.800	
SEP	1.200	.400 <T	
OCT	1.400	.500 <T	
NOV	1.400	.600 <T	
DEC	.800	.600 <T	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
VOLATILES			
BENZENE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 5.0 (81)
APR	BDL	BDL	
MAY	BDL	BDL	
JUN	.050 <T	.050 <T	
JUL	BDL	.100 <T	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
TOLUENE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 24.0 (84)
APR	BDL	BDL	
MAY	BDL	BDL	
JUN	BDL	.150 <T	
JUL	BDL	.150 <T	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
ETHYLBENZENE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 2.4 (84)
APR	BDL	BDL	
MAY	BDL	BDL	
JUN	BDL	.100 <T	
JUL	BDL	.100 <T	
AUG	BDL	.050 <T	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	.050 <T	
DEC	BDL	BDL	
M-XYLENE (UG/L)		DET'N LIMIT = .100	GUIDELINE = 300 (84)
APR	BDL	BDL	
MAY	BDL	BDL	
JUN	BDL	.100 <T	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
O-XYLENE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 300 (84)
APR	BDL	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
MAY	BDL	.050 <T	
JUN	BDL	.050 <T	
JUL	BDL	.050 <T	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
CHLOROFORM (UG/L)		DET'N LIMIT = .100	GUIDELINE = 350 (A1+)
APR	BDL	21.200	
MAY	BDL	13.900	
JUN	BDL	19.600	
JUL	BDL	19.800	
AUG	BDL	27.300	
SEP	.200 <T	26.500	
OCT	BDL	14.600	
NOV	BDL	21.600	
DEC	BDL	22.800	
DICHLOROBROMOMETHANE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 350 (A1+)
APR	BDL	17.200	
MAY	BDL	10.850	
JUN	BDL	14.750	
JUL	BDL	11.800	
AUG	BDL	16.800	
SEP	BDL	16.650	
OCT	BDL	9.250	
NOV	BDL	15.800	
DEC	BDL	15.700	
CHLORODIBROMOMETHANE (UG/L)		DET'N LIMIT = .100	GUIDELINE = 350 (A1+)
APR	BDL	12.600	
MAY	BDL	6.500	
JUN	BDL	6.300	
JUL	BDL	4.200	
AUG	BDL	6.700	
SEP	BDL	5.700	
OCT	BDL	3.600	
NOV	BDL	7.300	
DEC	BDL	7.800	
T-CHLOROETHYLENE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 10.0 (C2)
APR	BDL	BDL	
MAY	BDL	.	
JUN	BDL	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM MITCHELLS BAY WTP 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
BROMOFORM (UG/L)		DET'N LIMIT = .200	GUIDELINE = 350 (A1+)
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	.050 <T	
TOTL TRIHALOMETHANES (UG/L)		DET'N LIMIT = .500	GUIDELINE = 350 (A1)
APR	BDL	.800 <T	
MAY	BDL	.600 <T	
JUN	BDL	.400 <T	
JUL	BDL	BDL	
AUG	BDL	.600 <T	
SEP	BDL	BDL	
OCT	BDL	.400 <T	
NOV	BDL	.600 <T	
DEC	BDL	.600 <T	
APR	BDL	51.800	
MAY	BDL	31.850	
JUN	BDL	41.050	
JUL	BDL	35.800	
AUG	BDL	51.400	
SEP	BDL	48.850	
OCT	BDL	27.850	
NOV	BDL	45.300	
DEC	BDL	46.900	

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
P/A BOTTLE		0	0 (A1*)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	5000. (B1)
PENTACHLOROPHENOL	NG/L	50.	60000. (B1)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DIMENSLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	°C	N/A	<15 °C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	146. (D4)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	100000. (A1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A
HEPTACHLOR EPOXIDE	NG/L	1.0	3000. (A1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	280000.	(B1)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	87000.	(B3)
PICHLORAM	NG/L	100.	2450000.	(D3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	14000.	(A1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION	NG/L	N/A	N/A	
MALATHION	NG/L	20.	160000.	(G)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(B3)
METHYLTRITHION	NG/L	20.	N/A	
PARATHION	NG/L	20.	35000.	(B1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
PHORATE (THIMET)	NG/L	20.	35. (D2)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENOMYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	18000. (D3)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	70000. (A1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	50. (G)
METHYLENE CHLORIDE	UG/L	.500	1750. (D3)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	350. (D3)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (D1)
1,2-DICHLOROPROPANE	UG/L	.050	10.0 (G)
TRICHLOROETHYLENE	UG/L	.100	5.0 (D1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	1510. (D3)
1,4-DICHLOROBENZENE	UG/L	.100	5.0 (B1)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	200. (B1)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	46.5 (D2)